

REMARKS

Applicants respectfully request reconsideration of the present Application in view of the foregoing amendments and in view of the reasons that follow.

With this Amendment, claims 1, 2 and 10 have been amended to correct minor typographical errors; no claims have been canceled; and, claims 37-61 are new. A detailed listing of all claims that are, or were, in the Application, irrespective of whether the claims remain under examination in the Application, is presented, with appropriately defined status identifiers. Thus, claims 1, 2, 4, 5, 8-10, 12, 17-20 and 37-61 remain pending in the Application.

Support for new claims 37-49 can be found in the disclosure in at least in original claims 1-20. In claim 37, the glass transition temperature up to 450°C is disclosed in paragraph of [0034] of the pending application published as U.S. Pub. 20060108033 (the '033 publication). Claim 50 is supported by the disclosure in paragraph [0026] of the '033 publication. Claim 51 is supported by original claims 13-15. Claims 52 and 58 are supported by the disclosure in paragraph [0035] of the '033 publication. Claim 53 is supported by the disclosure in U.S. Pat. No. 6,325,868 (the '828 patent), which is incorporated in the present application by reference (column 4, lines 10-11, the '828 patent discloses "a glass transition temperature of 773 K [i.e., 500°C] or above"). Claim 54 is supported by the disclosure in paragraph [0003] of the '033 publication. Claims 55 and 56 are supported by the disclosure in paragraph [0028] of the '033 publication. Claim 57 is supported by the '828 patent (column 4, lines 15-16, of the '828 patent discloses "a glass transition temperature of 823 K or above"). Claim 59 is supported by the '828 patent (column 2, lines 33-48). Claim 60 is supported by the '828 patent (column 2, lines 49-62). Claim 61 is supported by the '828 patent (Table 2 in column 6, line 52 to column 7, line 40). No new matter has been added.

Claims rejections under 35 U.S.C. § 112

The outstanding Official Action has rejected claims 1, 2, 4, 5, 8-10, 12, and 17-20 under 35 USC § 112, first paragraph as allegedly failing to comply with the written description requirement.

This rejection is respectfully traversed.

The Examiner's position is that there is no explicit disclosure of a bulk-solidifying amorphous alloy that is free from Ni, Al and Be. The Examiner cites the recent decision of the Federal Circuit in *Ariad*¹ to imply that even a **negative limitation** such as "free from Ni, Al and Be" falls with the scope of the *Ariad* decision.

In *Ariad*, the court's majority (9-2) concluded that the asserted claims of Ariad's U.S. Patent 6,410,516 were invalid for failure to meet the written description requirement. The court held that 35 USC §112, paragraph 1, contains separate written description and enablement requirements. As to the purpose of the requirement, the court stated, "requiring a written description of the invention plays a vital role in curtailing claims that do not require undue experimentation to make and use, and thus satisfy enablement, but that have not been invented, and thus cannot be described." Slip op. at 26.

The court provided little in the way of specific guidance as to what constitutes sufficient disclosure, declining (in its words) to "set out any bright-line rules" Slip op. at 25. The court articulated the test for sufficiency of written description as "whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date." Slip op. at 23. The court stated that "whatever the specific articulation, the test requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art. Based on that inquiry, the specification must describe an invention understandable to that skilled artisan and show that the inventor actually invented the invention claimed." Slip op. at 24. The court stated that the level of detail required to support the written description requirement depends on the nature and

¹ *Ariad Pharmaceuticals, Inc. v. Eli Lilly and Company*, No. 2008-1248 (Fed. Cir. Mar. 22, 2010) (en banc).

scope of the claims and the complexity and predictability of the technology. The court stated that the sufficiency of written description is a question of fact.

One focus of the court's analysis was on whether claims meet the written description requirement simply by having been present in the application as filed. The court stated that, although original claims are part of the specification, they do not necessarily satisfy the written description requirement. The original claims *define* the invention, but do not *describe* the invention. "For example," the court said, "a generic claim may define the boundaries of a vast genus of chemical compounds, and yet the question may still remain whether the specification, including original claim language, demonstrates that the applicant has invented species sufficient to support a claim to a genus." Slip op. at 20. The court held that a claim to a genus, particularly one that defined the members of the genus by their function (like Ariad's claims), "may simply claim a desired result, and may do so without describing species that achieve that result." *Id.*

However, nowhere does *Ariad* state that when the specification **describes** a genus and species within the scope of the genus (as in the present application), and if the genus is **narrowed down** to a sub-genus by a negative limitation to exclude a certain species, that in this situation the specification fails to describe the sub-genus excluding a few species. Instead, "[t]he current view of the courts is that there is nothing inherently ambiguous or uncertain about a negative limitation. So long as the boundaries of the patent protection sought are set forth definitely, albeit negatively," See MPEP 2173.05(i). Furthermore, MPEP 2173.05(i) states: "Any negative limitation or exclusionary proviso must have basis in the original disclosure. **If alternative elements are positively recited in the specification, they may be explicitly excluded in the claims.** See *In re Johnson*, 558 F.2d 1008, 1019, 194 USPQ 187, 196 (CCPA 1977) ("[the] specification, having described the whole, necessarily described the part remaining.".)" [Emphasis added.]

The guidance provided in MPEP 2173.05(i) that "[i]f alternative elements are positively recited in the specification, they may be explicitly excluded in the claims" is

quite logical and reasonable. Let us assume that there is a recipe for making cakes wherein the ingredients include salt and sugar. Furthermore, the recipe states that sugar may be excluded for a "diabetic recipe" and that salt may be excluded for a "blood pressure recipe." However, the recipe does not explicitly teach that a "diabetic and blood pressure recipe" should exclude both sugar and salt. In this case, does the recipe for making cakes fail to meet the written description requirement for a "diabetic and blood pressure recipe?" Clearly, no! If a person is diabetic, then he could decide to use the recipe without sugar. If a person has high blood pressure, then he could decide to use the recipe without salt. If a person is diabetic and has high blood pressure, then he could decide to use the recipe without both sugar and salt. However, just because the original recipe does not explicitly state a "diabetic and blood pressure recipe" without both salt and sugar, even though the recipe explicitly describes the "diabetic recipe" and the "blood pressure recipe," it does not mean that the original recipe does not support a "diabetic and blood pressure recipe." A person skilled in cooking would understand from reading the recipe that a "diabetic and blood pressure recipe" should exclude both sugar and salt.

In the present case, the situation is exactly the same as that of the hypothetical example mentioned above. The specification positively recites an exemplary alloy such as $(\text{Zr,Ti})_a(\text{Ni,Cu,Fe})_b(\text{Be,Al,Si,B})_c$ which includes Ni, Al and Be. See page 4, line 16, of the specification.² The specification also describes species within the scope of the genus. See page 4, lines 20-26. The specification also states in original claims 13-15 that the composition could be free from Al, Ni and Be, respectively. Therefore, as per MPEP 2173.05(i), "[i]f alternative elements are positively recited in the specification, they may be explicitly excluded in the claims," which is what has been done in claim 1.

Furthermore, as explained above, the court in *Ariad* stated that "whatever the specific articulation, the test requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art. Based on that inquiry, the specification must describe an invention understandable to that skilled

² Note that the line numbers in the left margin of the specification do not accurately line up with the actual numbers of the lines. The lines number mentioned here is correct.

artisan and show that the inventor actually invented the invention claimed." Slip op. at 24.

Even applying the test for written description as per *Ariad*, the specification of the present application clearly supports alloy compositions "free from Ni, Al and Be" for the following reasons. First, as explained above, "the four corners of the specification" (Slip op. at 24) disclose alloy compositions $(\text{Zr,Ti})_a(\text{Ni,Cu, Fe})_b(\text{Be,Al,Si,B})_c$, and that the alloys may be free of Al, Ni and Be. Second, the requirement that "specification must describe an invention understandable to that skilled artisan" (Slip op. at 24) is met as a skilled artisan would readily understand that the specification describes alloy compositions $(\text{Zr,Ti})_a(\text{Ni,Cu, Fe})_b(\text{Be,Al,Si,B})_c$ that are free from Al, Ni and Be. Therefore, in accordance with the *Ariad* decision, the specification clearly "show[s] that the inventor actually invented the invention claimed" (Slip op. at 24) in claim 1, i.e., "[a] dental prosthesis comprising a replication of at least one surface feature of at least one tooth having at least one portion formed of **a bulk-solidifying amorphous alloy that is free from Ni, Al and Be ...** ." [Emphasis added.]

CONCLUSION

In view of the above amendment, applicant believes the pending application is in condition for allowance. The Director is authorized to charge any fees necessary and/or credit any overpayments to Deposit Account No. 03-3975, referencing Docket No. 069648-0388449.

Respectfully submitted,

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